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ORIGINAL ARTICLES.

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A CASE OF APPARENT NON-TRAUMATIC DOUBLE  
IRIDODIALYSIS. GLAUCOMA. CILIARY STA-  
PHYLOMATA. DETACHMENT OF RETI-  
NAL PERIPHERY. CHOROIDAL HÆM-  
ORRHAGES. DISSEMINATE CHORIO-  
RETINITIS AND NEURITIS OPTICA.

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BY ADOLF ALT, M.D., ST. LOUIS, MO.

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[ *With Micro-Photographs and Two Illustrations in the Text.* ]

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On October 3, 1888, Mrs. E. K., aged 24 years, called on me on account of a gradual distortion of the right pupil accompanied by loss of vision and occasional attacks of pain. She had noticed these symptoms for several months but could give no definite dates. According to her story she had never before had an inflamed eye, there never was any corneal ulceration and the eye had never been injured. Vision, on that date, =  $\frac{20}{60}$ . T. slightly above normal. V. F. apparently a little concentrically contracted. On inspection the pupil was found pear-shaped, the iris being contracted down and outward (see Fig. 1) and adhering to the corneo-scleral tissue. At the place of adhesion several little black nodules protruded and seemed to press the periphery of the crystalline lens slightly backwards. Atropine but slightly dilated the otherwise almost immovable pupil (see Fig. 1). Ophthalmoscopically I only

found a very hyperæmic optic papilla. The other eye was normal.

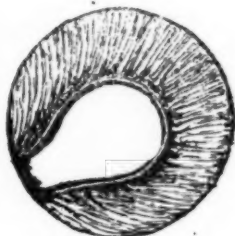


FIG. 1.

This combination of symptoms seemed to point to a possible growth starting in the ciliary body and I asked the patient to return after some time for another examination.

However, I did not see her again, until September 20, 1895. Of what occurred during this period of seven years, I could glean but little from her statements. With repeated attacks of pain the eye had gradually become blind, although she had, according to her statement, been under the treatment of another oculist for two years. She was now suffering excruciating pains in the blind eye and head, so that she had not slept for several weeks and begged to have the eye removed.

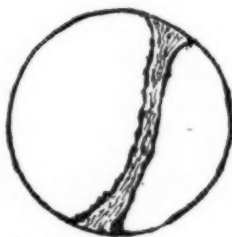


FIG. 2.

To my astonishment I found now that the iris was reduced to a small band, running almost diagonally through the anterior chamber (see Fig. 2). In this manner two pupils of unequal size had been formed. There were two small sclerectatic spots in the ciliary region, one upward and one inward. T.+1. With the ophthalmoscope the papilla could barely be seen and near it three large patches, the nature of which I was un-

able to determine, yet I thought them to be hæmorrhages. The periphery of the retina was detached.

As sight was absolutely destroyed and the eye continued to be extremely painful, and, as from the former examination and the increased tension accompanying a retinal detachment, I now felt almost certain of the presence of an intra-ocular growth, I did not hesitate to gratify the patient by the removal of the eye.

The healing was uneventful.

When the hardened eyeball had been cut in two, the most astonishing fact was revealed, that the iris was nowhere wanting or torn from its ciliary insertion. On the contrary it appeared all around, except where the band of iris-tissue crossed the anterior chamber, about like the stump after an iridectomy has been made. The periphery of the retina was detached, the vitreous was tinted with blood pigment. The choroid in the neighborhood of the optic papilla showed a number of larger and smaller hæmorrhagic spots which, the eye being hardened in formalin, could be seen through the retina.

Microscopical sections through any of the parts where clinically an iridodialysis had been diagnosed, show that instead of being torn off from its ciliary insertion the iris is shrunken *in toto* towards its periphery. The resulting iris-stump is all around firmly adherent to Descemet's membrane. In this manner the iris-angle is throughout obliterated. This accounts for the increase of the intra-ocular tension.

Figure I (plate) shows such a section through the iris-stump. The iris-tissue, instead of its normal spongy appearance, is changed into a very dense connective-tissue. The blood-vessels walls are very much thickened; some blood-vessels are totally obliterated, others have a comparatively wide lumen. These latter vessels apparently all lie near the posterior surface. The uveal layer is greatly wrinkled and very much thicker than normal. In bleached specimens it is seen that its cells are crowded over each other so as to form four and more layers in places, instead of the normal two. Figure I is a reproduction of a section from the part, where at the first visit I had suspected a growth in the ciliary body. At the anterior portion of the stump in this illustration a small portion of the uveal layer is seen to separate itself from the iris-tissue. As I kept on making sections in the direction to-

ward the base (downward) of the band of iris-tissue this tail-like, darkly pigmented, appendage grew gradually larger. After a few more sections had been made its elongated end, first bent towards the anterior chamber, assumed a curve backwards toward the cornea. This condition is seen in Figure II. This curving outward gradually increased to a rolling up and finally near the base of the iris-band this part of the layer appeared rolled up as it is shown in Figures III and IV.

Although I do not quite understand the mechanism to which this rolling up is due, one thing seems to be plausible, namely, that the whole iris-tissue in the course of its shrinkage was in this part torn from its uveal layer. Detachments of portions of the uveal layer simulating, or actually forming a cyst-like space between it and the iris-tissue, are not very rare. I have seen them in a number of cases, and Treacher Collins and others have described such detachments. In the case under consideration we have to deal, however, with a different detachment, really with a detachment, so to speak, of the iris-tissue from its uveal layer and not of the uveal layer from the iris.

This rolling up of the uveal layer abruptly ends at the base of the remaining band of iris-tissue. In sections through this band, the iris-tissue presents also a condition of high-grade atrophy. The pigment of destroyed cells lies free and in larger lumps in its meshes. The blood-vessels are partially obliterated. There are others, however, especially near the periphery which is firmly adherent to the corneo-scleral tissue, which are much enlarged; their walls are considerably thickened. In about two-thirds of the breadth of this band of atrophied iris-tissue the sphincter-muscle is visible. In a number of sections a torn off fold of the uveal layer lies upon the anterior surface of this band.

Sections through the remainder of the shrunken iris do not in any way differ from Fig. I, except that the uveal layer is not as thick, is not folded, and does not reach quite to the anterior part of the iris-stump.

The ciliary body is, also, throughout atrophic. The small ciliary staphylomata present nothing unusual.

The choroid, atrophic throughout, is literally stuffed with blood from the equator backwards, so that no details can be made out, except in the neighborhood of the optic papilla,

where there is a large number of smaller and larger chorio-retinitic foci in different stages of development yet all of recent date, as no scar-tissue has as yet been formed.

The optic papilla is deeply cupped, yet this cupping must have developed at some earlier period of the affection, for the previously atrophic nerve and the cupped papilla show the signs of a recent and quite violent interstitial neuritis. The blood-vessels are gorged with blood and the whole tissue is filled with round cells. A certain amount of œdema has caused a central prominence in the former papillary cup, which springs forward into the vitreous like the boss on a shield.

Reviewing the history of this case, as far as I know it, and the histological findings, I imagine that the original shrinkage of the iris to one side, as I observed it when I saw the patient for the first time, was, perhaps, due to the shrinking of a newly formed membrane on the anterior surface of the iris, here localized, as I have detailed in the June number of this Journal. Of course, it is impossible to say what the formation of this surmised membrane was due to, unless perhaps to a hæmorrhage into the anterior chamber, from an equally unknown cause. Whatever caused the shrinkage of the iris-tissue in this direction, somewhat later, probably, induced an equal shrinkage in an almost diametrically opposite direction. The iris-tissue, already atrophic by this time, must then have given way near the pupillary edge and while the torn off part shrank back to the periphery of the iris, the other part remained forming the band of iris-tissue as seen in Fig 1 (in the text). When the first glaucomatous attack occurred, I do not know, but probably early in the history of the case.

The inflammatory attack combined with chorio-ridal hæmorrhages, neuritis optica and disseminate chorio-retinitis near the posterior pole of the eyeball, which brought her to me begging to have the terribly painful eye removed, was evidently of recent date.

The peculiar manner, in which the iris became during its shrinkage, in part torn away from the uveal layer, is a perfectly new observation to me, nor do I remember having read anything similar to it elsewhere. How this portion of the detached uveal layer came to roll itself up in the manner shown in the illustrations accompanying this description, I am at a loss to explain.



## EXTRACTION OF A PIECE OF STEEL FROM THE VITREOUS BY THE HIRSCHBERG MAGNET.<sup>1</sup>

BY HOWARD F. HANSELL, M.D., PHILADELPHIA, PA.

H. B., a sailor, aged 30, applied at the Eye Department of the Jefferson Medical College Hospital in October, 1896. He stated that for some weeks he had suffered with pain, inflammation and partial loss of vision in the left eye. He knew of no cause nor could he date the commencement of his trouble from any particular occasion. The acuity of vision averaged  $\frac{20}{60}$ , sometimes a little better, sometimes a little worse. The ciliary vessels were injected and the ciliary region sensitive to the touch. The right eye was emmetropic and normal in every respect. Through the dilated pupil of the left the ophthalmoscope showed that the cornea, aqueous, iris and lens were free from disease and that the vitreous was partly filled with coarse floating opacities, in the midst of which and moving with every rotation of the ball, could be readily seen a small reflecting surface that had every appearance of a piece of metal. The fundus imperfectly visible, presented nothing abnormal. Upon close inspection a small scar was detected in the conjunctiva and sclera below and to the outer side of the corneal limbus. The history of an injury was then elicited. In April last, while hammering a steel rivet, the patient felt a sudden sharp pain in the eye and thought it had been struck by a small fragment of the hammer or rivet. He claims that a piece of steel was removed from the eye at this time. The eye rapidly recovered its normal condition and he gave the accident no further thought. During the few days the man was kept under observation, the gradual diminution of vision, continued pain and injection and the repeated confirmation of the diagnosis of the presence of a foreign body in the vitreous decided me to operate. Under thorough antisepsis and cocaine anæsthesia, an incision, several millimetres in length, was made through the conjunctiva in its lower and outer aspect. Sliding the cut edges of the conjunctiva over to that portion of the sclera through which I had selected to perforate the ball I in-

<sup>1</sup>Read at the November meeting of the Ophthalmic Section of the College of Physicians, Philadelphia.

cised the clera in a line approximately parallel to the insertions of the inferior and external rectus muscles and midway between them. A bead of vitreous the size of a pea presented at the opening. I then introduced the finest point of the Hirschberg magnet twice unsuccessfully. The third effort was made by my chief of clinic, Dr. W. M. Sweet, and upon withdrawal of the magnet a small corroded piece of iron was found clinging to its end. During each withdrawal the edges of the scleral cut were retracted by Dr. E. K. Perrine, one of the assistants of the clinic, in order to permit of the easy egress of the foreign body should it be caught by the magnet. The conjunctiva was returned to its proper position, stretched over the scleral incision and sutured. There was no appreciable loss of vitreous. The eye was dressed with wet bichloride gauze and tightly bandaged. The healing was rapid and uneventful. At the last visit one week after operation vision equalled  $\frac{20}{1}$  and gave every promise of further improvement.

Three thoughts seem worthy of being noted in connection with this case. (1) The foreign body was extracted six months after its entrance into the ball. (2) The retraction of the edges of the opening in the sclera to permit of easy exit of the foreign body. (3) The recovery of vision. It is usually our misfortune to operate only after all chance of restoring vision has long since passed away, when the object of operation is to avoid enucleation and to prevent sympathetic ophthalmia.

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### EUCAINE HYDROCHLORATE. A NEW LOCAL ANÆSTHETIC.

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BY J. ELLIS JENNINGS, M.D., ST. LOUIS, MO.

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A new local anæsthetic has recently been introduced to the medical profession under the name of eucaine hydrochlorate. Its chemical name is methyl-benzoyl-tetramethyl-gamma-oxy-piperidine-carbonic acid methyl ester. Eucaine is a colorless neutral crystalline powder soluble in ten parts of cold water. *It does not lose its strength or decompose when kept in solution and may be sterilized without suffering deterioration.*

In a paper read at the session of the Hufelandische-Gesellschaft, Berlin, April 16, 1896, Dr. G. Vinci described his experiments with the drug, as follows:

*Local Action.*—A 2 to 5 per cent. solution of eucaïne instilled into the eye of an animal, as a dog or rabbit, caused complete local anæsthesia in from one to three minutes. It began in the cornea, and spread from thence to the conjunctiva, and lasted on an average from ten to twenty minutes. It was readily prolonged by repeating the dose. The pupil was not dilated, and reacted well to light. Injected under the skin eucaïne caused complete anæsthesia of the part so that the reflex could not be evoked even with a needle. A similar complete local anæsthesia of the mucosa was effected when a eucaïne solution was painted over it.

*Systemic Action.*—The general action of the drug, both in cold- and warm-blooded animals, consisted in a marked excitation of the entire central nervous system, followed by paralysis; in toxic doses going on to death. Small doses administered to mice and rabbits caused increased reflex excitability and increased but weakened respiratory movements. Medium doses ( $\frac{1}{3}$  to  $\frac{1}{2}$  grain per 35 ounces of body weight of rabbits) caused repeated tonic and clonic convulsions. When the dose was increased to  $1\frac{1}{2}$  to  $2\frac{1}{4}$  grains the convulsions returned continuously, and affected all the muscles of the body. The animals finally died when the paralysis reached the respiratory muscles.

As regards its action on the heart and the blood-vessels, the subcutaneous and intravenous injection of small and medium doses shows it on the average from twenty to thirty beats per minute, but without otherwise modifying the beats, or increasing the blood pressure. This effect on the pulse is caused by the excitation of the central vagus; for section of the vagi causes an immediate increase of the blood pressure. Death occurs from paralysis of the respiratory centres, for the heart continues to beat for some time thereafter.

In all these points eucaïne is similar, physiologically, to cocaine; yet there are some important differences, which must not be forgotten. In the first place, eucaïne is *less poisonous than cocaine*. Whilst the animals treated with eucaïne survived, other animals injected with the same doses of cocaine, died. The pulse with eucaïne is always *decreased* in frequency;



with cocaine there is a *primary acceleration*. As regards their local action, the commencement of the anæsthesia, its duration and intensity, there is no difference between the two substances. *But eucaine causes no ischæmia*; on the contrary, *vascular dilatation* occurs. A further difference is that *the pupils are not affected*; *mydriasis does not occur*, and *the reaction to light remains normal*.

At the suggestion of Dr. Alt I secured a quantity of eucaine from Scherin & Glatz, New York, and experimented with a 2 per cent. solution on normal eyes and on cases where a local anæsthetic was indicated. It was used before making applications of silver and copper to the conjunctiva of the lids, cauterizing corneal ulcers, removing foreign bodies, operations for chalazion, ectropion, etc. In the normal eye the first drop instilled caused some smarting, burning, lachrymation and slight hyperæmia of the entire conjunctiva. In diseased eyes these symptoms were more marked. The smarting disappears at the end of two or three minutes when, if a second drop is instilled the smarting returns, but to a lesser degree. The anæsthesia begins in from three to five minutes and lasts from ten to fifteen minutes. According to Vinci, the anæsthesia began in the cornea and spread from thence to the conjunctiva. I agree with Berger that it begins at the point where the drop first touches the mucous membrane and lasts longest there. The hyperæmia is slight in some cases, more marked than in others, and persists usually for about half an hour. Vinci states that eucaine does not induce mydriasis and that the pupil reacts normally to light. I made a careful test on a normal eye with the following results: Before instilling eucaine the right pupil of the patient measured 5 mm., the left  $4\frac{1}{2}$  mm.; both reacted promptly to light. I then instilled one drop of eucaine into the left eye and five minutes later, a second drop. During the anæsthetic stage, the left pupil was not affected as regards size and reaction to light. But when I next looked at the eyes, an hour and a half after the instillation of the first drop, the right pupil still measured 5 mm., *while the pupil of the left, or eucaine eye, had dilated from  $4\frac{1}{2}$  to 6 mm.* The right pupil reacted promptly to light, *while the movements of the left were markedly sluggish.* These results differ from those of Vinci, but while it is true that eucaine effects the size and movements of the pupil, this is less marked than after the use of

cocaine. No disturbance of accommodation was observed, although it is reasonable to suppose that more extended experiments will show a slight loss of accommodative power corresponding to the effect on the pupil. I examined the cornea carefully to note the effect of eucaïne upon its epithelium. There was no loss of lustre, no dryness or exfoliation of corneal epithelium as is observed after the use of cocaine. In the various operations in which eucaïne was used, it was found equal to cocaine in rapidity of action, duration and intensity of the anæsthesia. It will thus be readily seen that eucaïne is a valuable addition to our list of remedies and deserves to rank with cocaine as a local anæsthetic. It is superior to cocaine in that it does not decompose when kept in solution, can be rendered aseptic by boiling, is less poisonous, has but a slight effect on the pupil, causes no disturbance of accommodation, and has no effect on the corneal epithelium.

The smarting and conjunctival congestion caused by eucaïne is certainly an inconvenience, but should not prevent our preferring it to cocaine in operations where the absence of mydriatic effect is of especial importance.

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#### MODIFICATION OF THE ORDINARY LACHRYMAL PROBE.

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BY JOHN J. KYLE, M.D., MARION, IND.

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The treatment of stenosis of the lachrymal duct is often tedious and very annoying to the oculist.



Many patients are stoical and make but little resistance to the passage of the probe, while on the other hand, to pass the probe into the lachrymal duct of a nervous patient is, to say the least, difficult. It is with great pain that the probe is first passed into the duct; when this is once accomplished, it is wise to leave it in position for a certain time, when it can be removed and duct thoroughly syringed with some alkaline solution, and probe reinserted; thus, by process of gradual

dilatation, if necessary, a style can be easily inserted. To do away with the unsightly protruding probe, and its annoyance to patients, and to better enable us to leave it in position, the following modification is submitted: The probe is made by E. B. Meyrowitz, and the accompanying cut partially explains itself. A small screw unites the halves firmly together, and thus enables the operator to easily separate the parts when in position. Such a probe is intended to do away with the use of styles and frequent probings, and to accomplish in a few weeks that which would often take months.

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A CASE OF FILARIA OCULI HUMANI. J. W. BARRETT, D.M. (*Archives of Ophthalmology*, July, 1896).

The patient, a young man, had lived on the Gold Coast in Africa for some years. He left it four years before I saw him, and during that time he resided in Melbourne.

Three days before presenting himself for treatment he felt something wrong with the left eye, and his friends then noticed a small thread-like object moving beneath the conjunctiva. This presently disappeared. Three days later the patient visited me and I found in the upper part of the eye, and about four to six millimeters from the cornea, a white, thread-like object moving in folds. The lids were at once retracted by a speculum and the conjunctiva and the worm seized with a pair of iris-forceps. An incision was made with a pair of scissors and the worm was seized with another pair of iris-forceps and gently drawn from the opening. It continued to move for some minutes after its extraction. The worm was about  $1\frac{1}{4}$  to  $1\frac{1}{2}$  inches long and in bulk the size of a fine piece of string. Dr. Dendy examined it for me and pronounced it to be a filaria, probably filaria oculi humani.

The patient said that such cases are common on the Gold Coast and that the natives extract these worms with fine bone needles, one of which he produced for my inspection. The striking feature about the case is the fact that this filaria had remained hidden, apparently in some lymph recess or artificial sinus, for four years.

## CORRESPONDENCE.

### ASSOCIATED PHYSICIANS AND SURGEONS OF SANTA CLARA VALLEY.

Editor AMERICAN JOURNAL OF OPHTHALMOLOGY—We ask you to give publicity to this letter to the end that in all communities afflicted with the pestiferous practice of lodge doctoring, physicians may be encouraged to assert their independence through organization.

Here, in Santa Clara County, Cal., containing 70,000 population, all the physicians of the county, numbering 124, have entered the compact that has ridden us of a slavish evil, and wrought independence and freedom for the practitioners of medicine. Investigation shows that medical compensation for lodge work averages about 15 cents on the dollar.

Even respectable lodge physicians feel a sense of degradation in giving their services for 15 cents on the dollar, and the ever-increasing spread of these alleged charitable institutions is absolutely destructive to the business of other physicians.

The main incentive of the persons who band themselves together in lodges is to get cheap doctoring; they are willing to take but not to give. They belong to protecting unions, and the same right should not be denied physicians. Ninety-nine per cent. of these people are able to pay reasonable fees to physicians, but will not do so as long as a few doctors in every community for the sake of immediate gain can be induced to stand as driven guys to the lodge politicians. No preacher or lawyer would give his services to these people for 15 cents on the dollar. No grocery store or merchandise firm would contract to supply these lodges with goods at 15 cents on the dollar of actual worth.

The remedy is simple and manifestly efficacious, depending upon the personal honor and free will of those concerned. Where one doctor temporarily profits by contract work the business and ethical rights of fifty others are violated; hence an overwhelming *esprit de corps* is created among physicians which will sustain strict observance of the pledge.

LINCOLN COTHMAN, M.D.,

San Jose, Cal., November, 1896.

Secretary.

## SOCIETY PROCEEDINGS.

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### OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

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THURSDAY, NOVEMBER 15, 1896.

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EDWARD NETTLESHIP, F.R.C.S., President, in the Chair.

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*Intraocular Cysticercus.* Notes of a series of Cases. By DR. HILL GRIFFITH.

The author's first two cases were living specimens. A blue cyst could be seen in the eye with a neck waving about in the vitreous; in the first of these specimens destructive inflammation followed, and the eye was removed; in the second case the globe was opened by a meridional section of the sclera at the equator of Dr. Little; the wound gaped, the cyst presented itself and was removed. In the third case the patient was a youth aged 17. The sight had been failing two years; there was total detachment of the retina and the T. was — 3. The space behind the detached retina contained a cysticercus, with a concentric arrangement of bluish-colored lymph, which he considered to be characteristic of cysticercus. The fourth specimen, an eye lost from slow destructive inflammation, showed the same rounded bluish mass in the vitreous. The fifth case presented nothing remarkable. The sixth case showed all the characters of a cysticercus, and had the concentric arrangement of fibrous tissues, but its head could not be seen; it could not, therefore, be certain that it was a cysticercus, although he felt quite sure of it. The seventh case was that of a child aged  $3\frac{1}{4}$  years, with cataract in the right eye, with no perception of light, and with a white opacity deep in the eye. Glaucoma came on, and the eye was removed. The interior of the eye was lined throughout with a dense membrane in the situation of the hyaloid membrane, consisting of an immense number of layers of fibrous tissue. In this lamellation of the outer membrane the cyst resembled a hyda-



tid; he did not know if hydatid has been seen to occur in the eye, but the resemblance was so strong that he could not help thinking that this was its nature. All these cases occurring at Manchester made it probable that cysticercus is not so uncommon as was thought in England. Where there had been slow gradual failure of an eye without much inflammation and with a mass of rounded lymph in the vitreous, the case was probably a cysticercus.

THE PRESIDENT remarked that very few in England knew much about cysticercus; possibly this was due to its being sometimes overlooked. There might be something special in the condition of Manchester giving rise to the occurrence of cysticercus. It was known to have a very different distribution in different parts of Germany, it was common in Berlin and very rare in Vienna.

MR. LAWFORD asked what were the conditions under which the patient lived, and were these cases due to *tænia solium* or *tænia medio-canellata*.

MR. HARTRIDGE asked if the patients were English or Germans, and what food they ate.

In reply, DR. HILL GRIFFITH knew nothing of the habits of the patients previous to their being seen; they were all English. He did not know whether the worms were *tænia solium* or *tænia medio-canellata*.

*Modification of the Usual Method of Mounting Specimens in Glycerine Jelly.* By MR. DEVEREUX MARSHALL.

The author said he had frequently noticed much inconvenience arise from the comparatively low melting point of the glycerine jelly in which museum specimens were mounted, and also the color of most of the jelly was distinctly brown. He recommended the following method as producing jelly which was only slightly colored: Cut up 30 grammes of the best French gelatine and allow it to soak in 240 c.cm. of cold saturated solution of boracic acid (made by dissolving boracic acid in boiling distilled water). Add 80 c.cm. of glycerine and the white and shell of one egg. Heat this in a water bath, and when the albumen was being precipitated add 1 c.cm. of glacial acetic acid. Boil for several minutes and filter through flannel; then again filter once or twice through filter paper in a hot water funnel. In order to make this resist heat the fol-

lowing simple method was adopted: Pour a sufficient quantity of the melted jelly into a test tube containing some formol in the proportion of 3 or 4 minims of the latter to the drachm of the former. Thoroughly shake together and proceed to mount the specimen in the usual manner. The jelly does not undergo any alteration in appearance by the addition of the formol, nor does it show any additional tendency to set more quickly. However, after the first twenty-four to forty-eight hours it will be found to have become quite incapable of being again melted by any amount of heat. It can be raised to any temperature or held in a test tube in a Bunsen flame until heated to boiling point, and yet it will not melt. Water may be boiled on its surface without any change whatsoever taking place in the solid mass of jelly. If less of gelatine were used a still whiter jelly was produced, but it was not so firm, but still it even then failed to melt with heat, after the addition of formol, but possibly after a time this might shrink whereas the other certainly did not. This would prove most useful to those who wish to have permanent preparations, even if they resided in very hot climates. Dr. Wilder, of Chicago, had recommended exposing the surface of the jelly to the action of formol, but the author preferred mixing it as above described.

Remarks were made by MESSRS. PRIESTLEY SMITH and GRIFFITH.

*A Stitch for the Adjustment of the Ocular Muscles.* By DR. H. LINDO FERGUSON.

After exposure of the tendon by a vertical incision, it is divided and held in the forceps. A suture is then passed through the conjunctiva and tendon at the edge of the latter, then through the subconjunctival tissue as far as the upper part of the cornea, when it is brought out on to the surface. The other end of the suture, armed also with a needle, is similarly passed through conjunctiva, tendon, and episcleral tissue to a point corresponding with the other thread at the lower part of the cornea; the middle part of the thread thus forms a loop over the middle of the tendon; the upper end of the thread is then passed beneath this loop and tied to the lower end, thus drawing the tendon and conjunctiva into place.

*Card Specimens.*

MESSRS. ANDERSON CRITCHETT and JOHN GRIFFITH: Implantation Dermoid Cyst of Orbit, With Microscopical preparations. MR. JULER: Case of Retinal Œdema With Sudden Failure of lower Half of Left Nasal Field of Vision. MESSRS. BRAILEY and FRYE: (1) Tuberculous Growth From Conjunctiva. (2) Membrane on Caruncle, Due to Friedländer's Bacillus. MR. ERNEST CLARKE: Green Cataract MR. FISCHER: Hyaline Bodies in Optic Nerve.

A CASE OF CONGENITAL COLOBOMA OF THE LENS. JOHN DUNN, M.D. (*Archives of Ophthalmology*, July, 1896).

Mr. S., aged 20, was lately brought to me to obtain my advice as to the advisability of removing from the left eye "a cataract which had been first noticed when he was six months old."

Under atropia the pupil dilated fairly well; no adhesions between iris and lens capsule; in two places *pupillary membranes* were to be seen; one inferiorly, extending directly upward; the other *extended from the centre of the coloboma in the lens, downward and outward*; the end which should have been attached to the iris had disappeared. The appearance of the lens varied under different methods of illumination. Viewed from behind a + 16 D. lens placed in the ophthalmoscope, the lens resembled in shape the basal half of a heart, the reëntrant angle being directed downward and outward, and from this angle projected the bit of pupillary membrane above referred to. The lens could be seen to exist only for about the upper half of the pupillary space; *extending from the inferior border of the lens substance to and behind the inferior border of the pupillary margin was a delicate membrane showing five vertical striæ very distinct.* The inferior border of the lens showed a delicate water line against the vitreous. From the inferior border upwards the lens substance became gradually thicker and appeared terraced as it were. For the lower two terraces the lens substance was transparent; the ascending surfaces of the terraces looked like dark lines, when the flat surfaces were viewed from above. For the third terrace the lens substance became partially opaque. The last terrace was totally opaque. Fundus normal except that temporally the outline of the optic disc was stretched suggesting the idea of a slight coloboma.

## OPHTHALMIC DIGEST.

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By J. ELLIS JENNINGS, M.D.,

OF ST. LOUIS, MO.

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### PARALYSIS OF THE SIXTH AND SEVENTH NERVES OCCURRING IN A PATIENT WITH WHOOPING- COUGH. F. A. CRAIG, M.B., R.W.I. (*British Medical Journal*, June 13, 1896).

The patient is a little girl, aged 3 years and 4 months, and the third of the family. When 9 months old she had a slight attack of bronchitis which soon passed off. Save for this, she has always been healthy. During the second week of September whooping cough appeared. The paroxysms of cough were not over frequent during the day, but numerous and severe at night. On one occasion during a paroxysm of coughing, blood came from the left nostril; this was the only time any visible hæmorrhage occurred. About the end of the first week in October, the mother noticed the child's left eye squinting, and its face "peculiar," especially when she cried from toothache, due to a few carious teeth. On November 11 I was called

*The Facial Paralysis.*—The characteristic physiognomy of facial paralysis was well marked. The lower part of the face appeared as if all the furrows were washed out, and it did not take any part in the movements of the face, even in the movements produced in crying. The angle of the mouth on the affected (left) side was on a lower level, and somewhat nearer the middle line. The lower lip and chin also appeared drawn over to the sound side, and the orifice of the mouth oblique. The orbicularis palpebrarum and frontalis muscles were very much weakened, though not absolutely paralyzed.

*Eye Phenomena.*—The left external rectus was completely paralyzed, so much so, that in the resulting internal strabismus, the inner edge of the cornea was hidden beneath the internal canthus. The eye could not be moved outwards, and

attempts to do so were accompanied by slight oscillations of the eyeball, probably due to the action of the oblique muscles. When going about the house the child covered the left eye with its hand to prevent double vision.

The history of the onset of the paralysis is most unsatisfactory, neither mother nor father are certain whether its onset was sudden or gradual or whether the paralysis of the facial and sixth nerves occurred at the same time.

This case is evidently one of infra-nuclear paralysis of the facial nerve. The want of absolute paralysis in the orbicularis palpebrarum and frontalis muscles may be explained by the lesion producing the paralysis not having to the same extent implicated the fibres for the orbicularis palpebrarum and frontalis as the fibres for the lower facial muscles. It may also be explained by the well known fact that in recovery the power of winking and closing the eye is first regained. According to Dr. Gower's classification, this case may be put down as a case in which the lesion is in the sixth nucleus, but that the structure observing the inward movement of the sound eye has escaped destruction.

The most common causes which might give rise to this lesion within the pons are: hæmorrhage, embolism, thrombosis, cerebral abscess, tumors—(including syphilitic growths); cerebral tuberculosis, and islets of disseminated sclerosis.

Disseminated sclerosis, cerebral tuberculosis and cerebral abscess, may, I think, in this case, be dismissed. The paralysis is not such as usually accompanies a tumor; it is not of slow origin; and it is not at all progressive. Epileptiform convulsions and cerebral vomiting are absent. We can not make out whether optic neuritis is present in this case or not without chloroforming the child. As to cerebral thrombosis this patient is a young child and free from syphilitic taint. I admit the possibility of a thrombosis forming during the exhaustion produced by a paroxysm of coughing, but I think it is unlikely to be the cause in this case.

Embolism is usually due to mitral or aortic endocarditis, neither of which exists. I have now dismissed all the likely causes of the lesion producing this affection of the facial and sixth nerves, except the commonest and most important, namely, hæmorrhage—hæmorrhages from the various surfaces, such as the nose, the mouth, the pharynx, the larynx, under



the conjunctiva are common in whooping-cough during severe paroxysms. And we are not without instances, verified by post-mortem examinations, of hæmorrhages into the brain occurring during a severe paroxysm of coughing. Gowers says that hæmorrhages into the substance of the brain, minute and massive, have occurred in young children during the paroxysms of whooping-cough.

If this case be due to hæmorrhage it must be small to cause so localized a paralysis; but the absence of other paralysis (such as of leg or arm) can not be regarded as weighing much against this supposition, for examples of such localized paralysis due to small cerebral hæmorrhages and confirmed by post-mortem examinations are not wanting.

It would also be interesting to know whether the hæmorrhage be venous, arterial or capillary. Gowers says that healthy arteries, no matter how great the internal pressure to which they are subjected, seldom, perhaps never, give way, but that healthy veins may give way under extreme pressure. In this case we have no reason to believe that the arteries are in any way diseased.

On the other hand, from the high venous pressure, from the fact that veins have thinner walls than arteries, from the fact that healthy veins may, under extreme pressure, give way, and from the fact that the hæmorrhages which usually occur in whooping-cough are venous, we may reasonably assume that this hæmorrhage is venous.

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THE USE OF FORMALINE IN OPHTHALMIC PRACTICE. SWAN M. BURNETT, M.D., Ph.D. (*Ophthalmic Record*, March, 1896).

Formaline is a forty per cent. watery solution of formaldehyde. Formol, the German preparation is of approximately the same strength. Formaldehyde itself is a strong escharotic and one of the most powerful germicides and antiseptics known. Animal tissues suspended in its fumes are preserved from putrefaction. As a tissue preserver formaline has no superior, and will no doubt supplant alcohol for that purpose, since it is much cheaper and has many other advantages as a preserving agent. In the first place it does not act by extract-

ing the watery constituents from the tissues, and there is therefore no shrinkage and consequently no distortion of the elements from their normal relations. The tissues also retain much of their original color and transparency. Even the crystalline lens does not become completely opaque under its influence for quite a long while. In the preparation of tissues for section for microscopic examination, therefore, it is vastly superior to alcohol or Müller's fluid or any other agent that has been yet employed for that purpose, and it has the further advantage of being very rapid in its action. An eye will become sufficiently hard for cutting in three or four days in a five or ten per cent. solution which is the strength usually employed as a hardening agent.

The ophthalmological world first became aware generally of the value of this quality of formaline through Prof. Leber, of Heidelberg, at the Ophthalmological Congress in Edinburg, in 1894. The credit of its first use, however, I believe belongs to Hermann.

My special purpose in this short paper is to set forth its therapeutic value in ophthalmic medicine and surgery. It is a germicide of great power, and has little, if any, toxic properties. Up to this time no case has been reported of any deleterious effect from its use. It has the power of rapidly diffusing itself through the tissues, and is therefore far superior to sublimate, which, in addition to its toxic effect, coagulates the albumen at or near the surface, which not only forms a barrier to its further penetration of the tissues, but even constitutes a good nidus for the development of pathogenic germs.

Most excellent results have been obtained from its use in infecting ulcers of the cornea and purulent conjunctivitis. The corneal ulcer can be touched with solution of 1 to 200 or 1 to 500 once every day, and for general use as an antiseptic a collyrium of 1 to 1,000 or 1 to 2,000. I have a few times cauterized the ulcer with 1 to 100. One case of serpiginous ulcer I treated with formaline alone, and it turned out more satisfactorily than I have seen such cases by the old methods. In muco-purulent and purulent conjunctivitis my experience with it has been satisfactory. In the severe forms I use it as a general antiseptic in addition to the silver nitrate. In acute catarrh of the conjunctiva it has acted most promptly when used as a collyrium of the strength of 1 to 1,000 or 1 to 2,000

applied every four hours. For ulceration of the edges of the lids it acts well. The dosage in such cases is to be regulated by the desired effect, from 1 to 100 as a mild caustic, to 1 to 2,000 as a stimulant.

For the disinfection of instruments and keeping them aseptic, it had the great advantage of not dulling the edges of knives. It can also be used for washing out the conjunctiva previous to operation on the eye, though its disadvantage for this purpose is the slight burning sensation it causes sometimes even in solution of 1 to 1,000. This, however, is trivial.

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#### A CASE OF GUMMA OF THE CILIARY REGION.

H. CAMPBELL HIGHT, M.D., Singapore, Straits Settlements, (*British Medical Journal*, November 7, 1896).

The appearance of a gumma in the ciliary body is a rarity even in ophthalmic practice. According to Berger, only five cases had been reported up till 1892. Of these, one each was reported by Mauthner, Woinow, Alt, Ayres, and Panas respectively. How many more cases may have been reported since then the writer is unable to state, separated as he is so far from most of the ordinary sources of bibliographical research. It may be taken for granted, however, that the affection is a rare one if one judges from the paucity and, in fact, in most cases, the absence of any reliable information on the subject, even in the latest text-books.

The following case which I have had under observation almost since its commencement seems to me to be a typical example of the affection.

G., a Malay male, aged 30, contracted syphilis about two and a half years ago. He came to me on March 25 last with the history that two months previously he had suffered from inflammation of the right eye of a nature similar to the present affection. He had been treated locally and constitutionally by a colleague, and had made a good recovery. A fortnight ago the left eye became inflamed, and this time he was much more anxious than on the previous occasion, because in the course of a week the sight had so rapidly deteriorated that he could not count fingers at 10 inches. I saw him therefore, for the first time two weeks after the origin of the disease, and

noted as follows: The left eye shows much conjunctival and ciliary injection. The cornea is hazy, and the anterior chamber is deep, and contains in its lower part a collection of puro-lymph. In the upper and inner quadrant of the chamber a yellowish-red tumor is seen to project from the iritic angle, while above at a spot corresponding to the site of this growth there is a slight bulging of the ciliary region of a dark reddish purple color. Below in the lower and outer quadrant of the iris there is a smaller and somewhat irregular tumor, which is seen to be almost hidden in puro-lymph, and in the adjacent portion of the ciliary region there is a swelling of a like nature to that already described, but much less pronounced. The tension of the globe is  $+1$ . There is marked ciliary tenderness, and the patient complains of great pain in the eye and neighboring portions of the head. Associated with the local condition there is considerable constitutional disturbance, foul tongue, anorexia, constipation, slight fever, and sleeplessness.

A week later the ciliary swellings were more prominent, they had in fact developed into ciliary staphylomata, and they already presented the usual bluish black color owing to the pigment showing through the highly thinned sclera.

On April 24, a month after I first saw him, it was noted that the cornea is clearing up and the anterior chamber is free from the presence of puro-lymph, but is still very deep. It is unequally deep, being deepest at the point corresponding to the site of the upper staphyloma into which the iris seems to have been dragged. The pupil, which is irregular in outline, is adherent to the anterior capsule, and lies excentrically, being well in the upper and inner quadrant of the chamber, owing to the dragging of the iris. The upper staphyloma is very distinct, and is quite 4 mm. in diameter. The lower staphyloma has diminished considerably, and leaves two dark, elongated patches level with the surrounding sclera. The tension is still  $+1$ . Vision now amounts to the perception of objects moving in front of the eye—an improvement on the condition a month ago, when he was not conscious of a change from light to shade.

On June 20 it was noted that the staphyloma had greatly diminished in height and that although the pupil was still fixed the iris seemed not to be drawn so tightly towards the staphy-

loma. The tension was normal, and fingers could be counted readily at 14 inches.

*Remarks.*—This case is seen to be a very typical one in every respect. A gumma of the ciliary body usually appears in one to three and a half years after the appearance of the initial sore, according to Berger. In one case it arose about two and a half years after infection. It is generally preceded by iritis as it was here for nearly a fortnight. The number of gummata has varied in the five former cases from one to five in each case. In this case there were two. The bulging of the sclera which results may increase and give rise to opacity in the neighboring part of the cornea, as it has done in the case now reported, and the thinning may even go on to rupture of the gumma through the sclera. When perforation occurs, atrophy of the globe follows, but atrophy may follow even without rupture, according to Berger. In the case reported by Panas perforation occurred, and yet a cure took place. In the case now reported, the right eye has remained perfectly well since the attack of inflammation from which it suffered two months previous to the affection of the left.

*Treatment* in this case consisted of the administration of a quarter of a grain of calomel combined with opium every three hours. When the gums began to show signs of approaching salivation the dose was reduced to half a grain of calomel *per diem*. A fortnight later the iodide of potassium was commenced in addition to the calomel. Locally bollsadonna fomentations and atropine drops were employed throughout the first few weeks. In the course of a month, however, when it was found that the tension was remaining high and that the bulging of the staphylomata was increasing, eserine was used in place of atropine, and a compress and roller bandage were firmly applied. This soon reduced the tension, and the staphylomata ceased to enlarge.

Writing now, five months after the origin of the gumma, the visual acuity amounts to counting fingers at 18 inches.

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POSITIVE ABERRATION OF THE EYE. EDWARD JACKSON, M.D. (*Polyclinic*, August, 1896).

Most persons who wear correcting glasses for hyperopia, and see perfectly through them during the day, *see better with-*



out their glasses at dusk. Dr. Jackson showed that this was due to the lower hyperopia, or actual myopia, present at the margin of most dilated pupils; so that when the patient has to rely on this larger area of the dilated pupil to see in a dim light, the glasses make him near-sighted. This optical defect he calls the *positive aberration* of the eye, and finds it present in some degree in a large majority of all eyes.

# REMARKS ON PROGNOSIS IN EXOPHTHALMIC GOITRE. R. T. WILLIAMSON, M.D., Lond. (*British Medical Journal*, November 7, 1896).

The prognosis in exophthalmic goitre is a point of considerable importance. The patients who suffer from this disease are very nervous and excitable. In many cases the disease has followed some mental shock, and if a very favorable prognosis can be honestly given it will do much to calm the excited mental condition of the patient, and will be of considerable service therapeutically. The following are statistics with reference to thirty-two cases in which I have attempted to ascertain the course of the disease:

## RESULT IN THIRTY-TWO CASES.

|   |           |    |
|---|-----------|----|
| Fatal termination,  | - - - - - | 6  |
| Recovery, - - - - -   | - - - - - | 5  |
| Recovery almost complete,   | - - - - - | 2  |
| (Duration of life 17 years and 7 years)   |           |    |
| Considerable improvement,   |           |    |
| (Duration of disease in years $9\frac{1}{2}$ , $7\frac{1}{2}$ , 7, 6, 2),                                   | 5         | 18 |
| Only slight improvement   |           |    |
| (Duration of disease in years 7, $6\frac{1}{2}$ , 5, $2\frac{1}{2}$ , $1\frac{3}{4}$ , $1\frac{1}{4}$ , 1), | 7         |    |
| Condition much the same   |           |    |
| (Duration of disease in years 9, 7, $5\frac{1}{2}$ , $3\frac{1}{2}$ , 2, 2),                                | 6         |    |
| Patient still alive at the end of 7 years, condition not known,   | - - - - - | 1  |
| <hr/>   |           |    |
| Total,  | - - - - - | 32 |

If we eliminate from the above table the cases which have been under observation during the shorter periods, and include only those cases which have terminated fatally, those

which have recovered, and those in which the disease has existed for over five years, we have the following results in twenty-four cases: Fatal termination in six cases; recovery complete, or almost complete, in seven; improvement in seven; condition much the same in three; patient alive and following her occupation (exact condition unknown) one case. These conclusions furnish statistics which I believe represent fairly well the course of the disease.

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#### SOME BACTERIOLOGICAL EXPERIMENTS BEARING UPON THE STERILIZATION OF INSTRUMENTS USED IN CATARACT EXTRACTION.

SAMUEL THEOBALD, M.D. (*Journal of Eye, Ear and Throat Diseases*, October, 1896).

The question of the best method of sterilizing surgical instruments is one of great practical importance. Heat furnishes the most certain means of destroying pathogenic organisms; but, its effect upon the delicate instruments used in eye surgery is most deleterious, especially if they be subjected to its action for a considerable length of time.

Influenced by what Dr. Knapp told us some years since ("Trans. Amer. Ophth. Soc., 1886), as to the practicability of removing pathogenic organisms from cataract knives and similar smooth instruments by the simple mechanical process of washing and wiping, and at the same time wishing to avoid the blunting effect of long exposure to heat. I have been in the habit for a number of years, of cleaning my eye instruments previous to operating by giving them a brief *washing* in boiling water. This is accomplished by the aid of fixation forceps and a pledget of absorbent cotton, which has been boiled for some minutes, the cotton held by the forceps being used to wash off the blade of the cataract or iridectomy knife, the cystotome, etc., while these are immersed for a few moments in boiling water.

The efficiency of this method of sterilization seems to have been shown by the clinical results obtained; but, recently it occurred to me to put its efficiency to the test of bacteriological experiment, and, further, to endeavor to discover how far the sterilization was due to the comparatively brief action

of the heat and how far to the mechanical effect of the washing.

The blades and teeth of a pair of iris forceps were contaminated with a pure culture of the staphylococcus-pyogenes aureus. The blades of the forceps were then washed in boiling water, in the manner above described, and were then introduced into a culture-tube containing bouillon. No growth resulted, showing that the sterilization of the forceps had been effectual. A cystotome was treated in like manner, and with the same negative result—the culture medium remained sterile.

The iris forceps, after having been contaminated with staphylococcus aureus, were washed in water which had been sterilized by boiling, but had been allowed to stand until it had become lukewarm. The washing was done with the fixation forceps and cotton, as in the other experiments. The bouillon gave a growth of staphylococcus aureus.

A cataract knife contaminated with staphylococcus aureus was washed under the water spigot with sterilized absorbent cotton held in the fixation forceps. The culture tube gave staphylococcus aureus and also water bacteria.

These experiments seem to show that bacteria are not removed by simple washing, even from the smooth surfaces of a cataract knife. What they show most positively, however,—and this is point of great practical importance—is that, so far as the ordinary pyogenic organisms are concerned, a very brief *washing* in boiling water, which is not likely to appreciably blunt their cutting edges, suffices to sterilize effectually such instruments as are commonly used in eye surgery.

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CYST OF THE RIGHT OPTIC DISC, CHOROIDITIS,  
MACULAR HÆMORRHAGES. S. D. RISLEY, M.D.,  
Philadelphia (*Annals of Ophthalmology and Otology*, October, 1896).

Mrs. A. H., a Polish woman, aged 38, presented herself at the Philadelphia Polyclinic on October 24, 1895, complaining of impaired vision in both eyes and violent tempero-occipital headache. Vision was reduced to  $\frac{1}{LX}$  in each eye, while only large type could be deciphered at her selected near point. The corneæ were transparent, excepting a few gray opacities scattered around the periphery of both. The lens and vitreous

were transparent in each eye. The ophthalmoscope showed beside retino-choroidal disease in both eyes, a peculiar cystoid body (lemon-shaped) situated on the head of the optic nerve and concealing the upper half from view. There was myopic astigmatism present in both eyes, so that — 2 D. was required for the study of the fundus, but the apex of the cyst could be clearly seen with + 3 or + 3.50 D. Its projection, therefore, above the plane of the disc was approximately 2 mm. Directly below the cyst, but apparently not connected with it, were the remains of the hyaloid artery.

The precise nature or origin of this unique body upon the nerve must remain in uncertainty. I have not seen any similar appearance, and have not found any record of a similar case. There seems no rational connection between the disease of the fundus oculi and this curious cyst on the nerve. A more probable relation exists between it and the remains of the hyaloid artery, indeed, I was at first disposed to regard it as a cyst-like expansion of that vessel; but the most careful study shows no demonstrable connection between them, as is so obvious in the case presented by Mitvalsky.

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AN OPERATION FOR SHORTENING THE OCULAR MUSCLES IN ASTHENOPIA, ETC. FRANCIS VALK, M.D. (*New York Medical Journal*, November 7, 1896).

The operation for advancement of the ocular muscles has been in use by ophthalmic surgeons for many years, is a delicate and extensive operation in which an assistant is required; furthermore, the subsequent removal of the sutures is almost a second operation. For the past two years I have successfully attempted a different method to attain the same object, provided the result desired is not too great, and think that I have succeeded in devising a method of shortening the ocular muscles that is easy to perform, that does not require an assistant or the removal of the suture, and that, moreover, produces an entirely satisfactory result.

I will describe the procedure as I now perform it. The muscle to be shortened or strengthened is first exposed by a horizontal incision in the conjunctiva and subconjunctival tissue; then, after passing two strabismus hooks beneath the

muscle and forcibly separating them to the desired extent, I now pass beneath the muscle this little instrument, which I call twin strabismus hooks. This instrument consists of two arms connected by a hinge, over which hinge is placed a small spring sufficiently strong to keep the two hooks placed at the free ends of the arms well apart or separated while the suture is being applied. When in position the instrument is resting on the patient's cheek out of the operator's way. I now take a suture of No. 0 or 00 sterilized catgut that I have had put up in capsules, each containing sufficient for one operation, armed with a fine, round half-curved needle. This needle is now passed through the tendon close to the sclera and beneath the hook, coming out above, then passing it from within outward through the upper edge of the belly of the muscle at a point as far back as we desire to shorten the muscle. It is now carried across the muscular tissue and is again passed from without inward through the lower edge and comes out below; we now pass the needle back beneath the hook through the lower part of the tendon and the needle is cut off. In passing the suture we may commence below and so simply reverse the process. Now remove the hooks and carefully tie the suture according to the desired effect. When the suture is tied we see the small knuckle or *tuck* formed at the incision; this will slowly disappear as the suture is absorbed and the tissues firmly united. After the suture is tied I bring the edges of the opening made in the conjunctiva as nearly together as possible and then simply apply cold-water dressing. The eye is never bandaged except when the patient is going out, and moreover, it may be used. In cases of strabismus, either convergent or divergent, I generally cut the opposing muscle by a complete tenotomy before tying the suture.

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REPORT OF A CASE OF PARALYSIS OF CONVERGENCE WITHOUT IMPAIRMENT OF ASSOCIATED MOVEMENTS. HENRY W. HAYNE, Lawrence, Kan. (*Archives of Ophthalmology*, July, 1896).

October 16, 1895, Dr. Morse sent to my office Miss W., aged 17, with instructions that I should take her refraction, and, if necessary, prescribe the proper lenses, as she had been



a constant sufferer with headaches, both frontal and temporal, for the past nine months, and eye strain had been diagnosed. She is a well developed girl with dark hair and eyes, and apparently in robust health, with family history good. She is a close student and graduated without having any eye strain, and always enjoyed good health.

A careful examination without a mydriatic showed the following condition: V.,  $\frac{20}{xxx}$  for each eye, which was not improved by glasses. Abduction,  $12^\circ$ ; adduction,  $4^\circ$ ; exophoria,  $3^\circ$ . Homatropine was prescribed but as that failed to control accommodation three drops of a 4 gr. sol. of atropine were instilled. The ophthalmoscope revealed nothing unusual except a moderate flushing of both discs, which somewhat invaded a well-marked physiological cup. She accepted R.,  $\mp 0.25 \text{ C} + 0.25 \text{ c. ax. } 20$ ; L.,  $+0.50^\circ$ , which raised her visual acuteness to  $\frac{20}{xx}$ . Her full correction was ordered to be worn constantly, and she was told to report in one week. At that time her visual acuteness had risen in each eye to  $\frac{20}{xv}$  both with and without glasses, with no cessation of the headaches, which would be brought on at any time by reading or sewing ten minutes. There was now no flushing of either disc. Abduction and adduction being the same, prism  $8^\circ$ , total, in frames were ordered and she was taught to use them (Dr. Gould's method) twice daily at home, and to report at the office each day. Iodide of potassium and the bitter tonics were also prescribed at that time. Under the treatment she gradually improved until November 1, when adduction was  $10^\circ$ ; abduction  $6^\circ$ , with the same exophoria of  $3^\circ$  remaining. Abduction and adduction were always measured before the exercise was taken. I could frequently run her "convergence stimulus" adduction up to  $35^\circ$  in a few minutes without any discomfort whatever, and she felt encouraged as her symptoms were less severe. November 2, she presented herself complaining of headache of more than usual severity. Her adduction had dropped to  $0^\circ$ , the red glass produced diplopia at 20 feet, and she had exophoria,  $3^\circ$ . She was also found to have a divergent alternating squint which produced diplopia for all objects nearer than one metre; could detect no reduction in the mobility of either eye in any direction, and the amount of deviation remained the same in all portions of the field. She could follow the finger moving rapidly from side to side without any

apparent trouble, but instantly the finger was stopped, diplopia supervened. Tests were made in all nine positions, but in none of them was there any change in the diplopia, neither was there any tilting of the false image. There was no ptosis, pupillary reaction normal, both to light and accommodation. Amplitude of accommodation  $9\frac{1}{2}$  cm., or about 11 D. for each eye. All gymnastics were now discontinued. The point of maximum convergence gradually receded until a candle in a darkened room at 20 feet was clearly seen double, which was corrected by a  $1^{\circ}$  prism base in. \* \* \* Up to the present, June, 1896, all treatment has failed to relieve either the diplopia or her headaches, which are brought on by any near application of the eyes.

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#### A CASE WHERE A FOREIGN BODY REMAINED IN THE LENS FOR SEVENTEEN MONTHS.

JOHN DUNN, M.D. (*Virginia Medical Semi-Monthly*, October 9, 1896).

Mr. D., aged 25, in December, 1894, while breaking with a hammer some old pieces of glass from a window-frame, was struck in the left eye "with a piece of the putty." In February, 1895, he came under my observation. At this time there was no clouding of the lens, but beneath the anterior capsule, about the centre of its outer, lower quadrant, was a small speck, whose visible length did not exceed  $\frac{1}{2}$  mm., and whose breadth was scarcely more than  $\frac{1}{4}$  mm. "Foreign body in the lens" was the diagnosis made. No rupture of the anterior capsule was visible, nor were there at this time any inflammatory appearances about the eye.

After two visits Mr. D. disappeared, and was not seen again until June 8, 1896. In the months which had intervened, the eye had, on several occasions, been very painful. On June 5 the eye became much inflamed, and caused Mr. D. such discomfort that he decided to be no longer his own doctor.

On June 8 the eyeball was congested; there was a marked pink zone surrounding the cornea; pupil noticeably dilated; no iritis, the iris responding fully to atropia; tension, at the time of visit, not perceptibly increased. The lens was now completely cataractous; its general color was a grayish-yellow,

which contrasted strongly with the condition existing about the foreign body. This latter could be seen as a black speck in the centre of a cup-shaped area of grayish-white lens substance. As nearly as could be made out, the capsule over this area, which measured about 2 mm. at the surface, was wanting. There was no lens substance in the anterior chamber.

The lens was extracted without difficulty. The "piece of putty" proved to be a fragment of steel from the hammer, and measured 1 mm. by  $\frac{1}{4}$  mm. The grayish-white lens-substance surrounding the foreign body was examined under the microscope. No white blood cells were found in it. The extraction wound healed kindly. Excellent vision was obtained with use of proper glass, the fundus being normal.

The interest of the above case lies in the length of time that the foreign body remained in the lens. The case shows further what we are to expect when the lens capsule has been punctured by a very small foreign body which afterwards lodges in the lens-substance. It is to be noted besides that, although there resulted a cataractous condition, together with a change of consistency of the whole lens-substance, the disintegration was most advanced about the foreign body. The pain suffered from time to time by Mr. D. was due to swelling of the lens.

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## BOOKS AND PAMPHLETS.

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**SKIASCOPY AND ITS PRACTICAL APPLICATION TO THE STUDY OF REFRACTION.** By E. JACKSON, A.M., M.D. Second edition. Twenty-seven illustrations. Philadelphia: Edwards & Docker Co. 1896.

It is only about a year that the first edition of this book has appeared. That already a second one became necessary is not only a gratifying tribute to its gifted author, but also a proof that the study of skiascopy is growing rapidly. This second edition is but slightly altered and has one more illustration than the first one.

**PHYSICIANS' VISITING LIST FOR 1897.** Philadelphia: P. Blakiston, Son & Co.

The improvements made in this Visiting List seem to have met with very general approbation and we are glad to recommend it.

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PAMPHLETS.

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"Latent Mastoid Disease." By Harry Friedenwald, M.D.

"Argonia in Acute Stages of Gonorrhœa." By G. K. Swinburne, M.D.

"Bony Growth of the Auditory Canal." By William Cheatham, M.D.

"Deviation of the Cartilaginous Nasal Sæptum, Its Cure." By Emil Mayer, M.D.

"An Operation for Shortening the Ocular Muscles in Asthenopia." By Francis Valk, M.D.

"Dermatitis Periocularis Medicamentosa (Pseudo-Erysipelas)." By Edward Friedenberg, M.D.

"Description of a Few of the Rarer Complications During and Following Cataract Extraction." By Ch. A. Oliver, M.D.

"Transactions of the Medical and Chirurgical Faculty of the State of Maryland." Ninety-Eighth Session. Baltimore. April, 1896.

"The Microseopical Proof of a Curative Process in Tuberculosis; or the Reaction of Tuberculin Evidenced by Blood-Changes Hitherto Unrecognized." By Ch. Denison, M.D.

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THE WESTERN OPHTHALMOLOGICAL, OTOLOGICAL AND LARYNGOLOGICAL ASSOCIATION will meet in St. Louis, Mo., on the first Thursday and Friday of April, 1897. Physicians, desiring to present papers to this meeting are herewith requested to send the titles to the Secretary of the Association. It is intended to mail programmes by February 1, 1897. The railroads have promised a one and one-third fare on the certificate plan. The indications point to a large and useful gathering.

HAL FOSTER, M.D., Secretary.

